49 Convent Drive, Rm 3C76
Bethesda, MD 20892-1065

Thom Puifai Santisakultarm

puifai.santisakultarm@nih.gov

Education

2012-present **National Institute of Neurological Disorders and Stroke, NIH**, Bethesda, MD
Postdoctoral Fellow
Research Focus: Optical imaging of neurovascular coupling in awake non-human primate
Mentor: Afonso C. Silva

2007-2012 **Cornell University**, Ithaca, NY
Ph.D. in Biomedical Engineering
Thesis: Quantification of cerebral blood flow in mouse models of hematological disease
Mentor: Chris B. Schaffer

2004-2007 **Illinois Institute of Technology**, Chicago, IL
B.S. in Biomedical Engineering with a minor in music (G.P.A. 3.89 out of 4.00)
Research Focus: Vascular endothelial growth factor in rat model of diabetic retinopathy
Mentor: Jennifer J. Kang-Mieler

Funding

2015-2018 **National Institute of Neurological Disorders and Stroke Competitive Postdoctoral Fellowship – equivalent of NRSA F32** ($200,000)
"Optical imaging of neural activity and hemodynamics in the cortex and subcortical structures of awake marmoset monkeys"

2011-2010 **Howard Hughes Medical Institute Med-Into-Grad Fellowship** ($66,000)
"Two-photon imaging of leukocytes and microthombi plugging of cerebral microvessels"

2008-2009 **Cancer Research and Treatment Fund** ($73,000)
"Two-photon imaging of cerebral microcirculation in animal models of polycythemia vera

Teaching and Mentoring

(2016) Instructor for Foundations of Cellular Neuroscience course, Foundation for Advanced Education in the Sciences, NIH, Bethesda, MD

2014-2015 Mentor for two post-baccalaureate fellows and one summer student, NIH, Bethesda, MD. Current positions: MD/PhD student at Johns Hopkins University.

2014-2015 Faculty, Citizen Science program, Bard College, Annandale-on-Hudson, NY

2010 Teaching assistant for BME4110: Science and Technology Approaches to Problems in Human Health, Cornell University, Ithaca, NY

2009-2012 Mentor for two undergraduate and one summer students, Cornell University, Ithaca, NY. Current positions: medical students at University of Pittsburgh and Creighton University

Editorial Activities

2015-Present Reviewer, Nuclear Magnetic Resonance in Biomedicine
2015-Present Editor, NIH Fellows Editorial Board
2014-Present Reviewer, Neurophotonics

Outreach Activities

2014 Exhibit facilitator, USA Science and Engineering Festival
2014 Panelist, Illinois Institute of Technology Alumni in Science

2013 Panelist, National Institutes of Health Community College Day
2011 Teacher, Society of Women Engineers high school outreach
2010 Activity leader, Cornell's Learning Initiative in Medicine and Bioengineering (CLIMB)
2009 Activity leader, Cornell Upward Bound

Awards and Honors

2015 *Fellows Award for Research Excellence*, National Institutes of Health ($1,000)
2013 *Young Investigator Award*, International Symposium on Cerebral Blood Flow, Metabolism, and Function ($800)
2011 *2nd Place Abstract Award,* International Congress on Myeloproliferative Diseases and Myelodysplastic Syndromes
2011 *Young Investigator Award*, International Symposium on Cerebral Blood Flow, Metabolism, and Function ($800)
2007 *Magna cum laude*, Illinois Institute of Technology
2006 *Howard Hughes Medical Institute Summer Program in Neuroscience and Neuroengineering Fellowship* ($5,000)
2005 *Tau Beta Pi* engineering honor society

Professional Society Memberships

2015-present Young Investigator Committee Member, International Society for Cerebral Blood Flow & Metabolism
2012-present Member, American Association for the Advancement of Science
2010-present Member, Society for Neuroscience
2008-present Member, Optical Society of America
2006-present Member, Biomedical Engineering Society

Invited Talks

2015 "*In Vivo* Two-Photon Imaging of Cortical Microvascular Dysfunction in Essential Thrombocythemia and Polycythemia Vera," *Hematology Branch Seminar, National Heart, Lung, and Blood Institute, NIH*
2015 "Longitudinal Two-Photon Imaging of Cortical Microvessels and Neural Activation in Awake Marmoset Monkeys," *McGovern Institute for Brain Research Seminar, Massachusetts Institute of Technology*
2015 "Longitudinal Two-Photon Imaging of Cortical Microvessels and Neural Activation in Awake Marmoset Monkeys," *XXVIIth International Symposium on Cerebral Blood Flow, Metabolism and Function*
2015 "Quantification of Cerebral Hemodynamics and Neural Activity in Awake and Anesthetized Marmoset by Two-photon Imaging" *National Institute of Neurological Disorders and Stroke Retreat 2015*
2012 "*In Vivo* Two-Photon Imaging of Impaired Cerebral Blood Flow due to Leukocyte Plugging and Microthrombi in Myeloproliferative Neoplasms," *Massachusetts General Hospital Department of Neurology Seminar*
2012 "*In Vivo* Two-Photon Imaging of Cerebral Microcirculation and Hemodynamics in Animal Models of Rheological Diseases," *Laboratory of Functional and Molecular Imaging Seminar, National Institute of Neurological Disorders and Stroke, NIH*
2011 "Leukocyte Plugging and Microthrombi in Capillaries Contribute to Decreased Brain Blood Flow in Animal Models of Myeloproliferative Neoplasms," *International Congress on Myeloproliferative Diseases and Myelodysplastic Syndromes*
2011 "Visualization of Cardiac- and Respiration-dependent Pulsatile Hemodynamics in Cerebral Microvessels," *Biomedical Engineering Society Annual Meeting*

2011 "*In Vivo* Two-Photon Imaging of Cerebral Microcirculation and Neural Health in Normal and Disease States," *National Science and Technology Development Agency of Thailand*

2011 "*In Vivo* Two-Photon Imaging of Cerebral Circulation in Mouse Models of Myeloproliferative Neoplasms," *Howard Hughes Medical Institute Harvard Med-Into-Grad Symposium*

Selected publications

Peer Reviewed (H-index = 3; Total Citations = 71)

T. P. Santisakultarm, C. Q. Paduano, T. Stokol, T. L. Southard, N. Nishimura, R. C. Skoda, W. L. Olbricht, A. I. Schafer, R. T. Silver, and C. B. Schaffer, "Stalled cerebral capillary blood flow in mouse models of essential thrombocythemia and polycythemia vera revealed by *in vivo* two-photon imaging," *Journal of Thrombosis and Haemostasis* (October, 2014).

T. P. Santisakultarm, N. R. Cornelius, N. Nishimura, A. I. Schafer, R. T. Silver, P. C. Doerschuk, W. L. Olbricht, and C. B. Schaffer, "*In vivo* two-photon excited fluorescence microscopy reveals cardiac- and respiration-dependent pulsatile blood flow in cortical blood vessels in mice," *American Journal of Physiology, Heart and Circulation Physiology* (January, 2012).

R. A. Gould, K. Chin, T. P. Santisakultarm, J. M. Richards, C. B. Schaffer, and J. T. Butcher, "Cyclic strain anisotropy regulates fibroblast phenotype and matrix remodeling in 3D culture" *Acta Biomaterialia* (January, 2012).

Manuscripts Submitted or in Preparation

T. P. Santisakultarm, C. J. Kersbergen, D. K. Bandy, D. C. Ide, S. Choi, A. C. Silva, "Quantitative Two-photon Imaging of Cerebral Hemodynamics and Neural Activity in Awake and Anesthetized Marmoset," (in Final Preparation, *Proceedings of the National Academy of Sciences of the United States of America*).

T. P. Santisakultarm, A. C. Silva, "Cerebral Capillaries in Neurovascular Coupling," (in Final Preparation, *Journal of Cerebral Blood Flow and Metabolism*).

N. Nishimura, C. J. Kersbergen, J. Cruz Hernandez, I. Ivasyk, Y. Kang, S. Gherking, V. Muse, J. Zhou, J. D. Beverly, E. Slack, G. Otte, T. P. Santisakultarm, C. Iadecola, and C. B. Schaffer, "Capillary Plugging by Leukocytes Contributes to Blood Flow Reduction in Mouse Models of Alzheimer's Disease," (in Preparation, *Science Translational Medicine*).

Science Trade Journals and Commentaries

T. P. Santisakultarm and C. B. Schaffer, "Optically quantified cerebral blood flow," *Journal of Cerebral Blood Flow and Metabolism* (March, 2011).